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ABSTRACT

In a study of the level, complexity, and initiations of play behavior in 15 handicapped segregated, 15 handicapped mainstreamed, and 15 nonhandicapped mainstreamed preschoolers, Ss were observed during free play. Play levels, according to hierarchies of M. Parten and J. Piaget, as well as the play initiator were recorded every 3 minutes for 90 minutes. Groups differed in their use of onlooking, solitary and parallel play, total play complexity, and adult initiation of behavior. Handicapped segregated Ss performed more poorly than either the handicapped mainstreamed or the nonhandicapped Ss on each variable. There was no difference in the performance of the two mainstreamed groups. Findings were taken as supportive of the principle of least restrictive environment in P.L. 94-142, the Education for All Handicapped Children Act. (Author)

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SPECIAL EDUCATION PRESCHOOLERS: EVALUATING THEIR PLAY

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Abstract

This study examines the level, complexity and initiator of play behavior in handicapped segregated, handicapped mainstreamed and nonhandicapped mainstreamed preschoolers. Fifteen children from each category were observed during free play time and their Parten and Piagetian play levels and the play initiator were recorded every three minutes for ninety minutes. Groups differed in their use of onlooking, solitary and parallel play, total play complexity and adult initiation of behavior. The handicapped segregated preschoolers performed more poorly than the handicapped mainstreamed and non-handicapped preschoolers on each variable. There was no difference in the performance of the two mainstreamed groups.

SPECIAL EDUCATION PRESCHOOLERS: EVALUATING THEIR PLAY

Nursery school has historically been viewed as a place where children gather to play. Through play, schools supplemented the activities of the home, served as a place for children to learn and to socialize and provided information to parents on child growth and development (Hymes, 1950; Read, 1954). However, the launching of Sputnik in 1959 and the establishing of Project Headstart in 1965, changed many aspects of American education, including the traditional nursery school and its emphasis on play. There was more stress on cognitive activities in order to prepare children for future academic success (Bereiter-Engelmann, 1966). Nevertheless, for many professionals, the importance of play continued to be recognized and studied as one of the mediums through which children learn the skills they need for later school years.

With the passage of federal legislation (Public Law 94-142) in 1975, that mandates all handicapped children between the ages of three and twenty-one be educated in the least restrictive environment, the topic of play surfaced in a new arena, that of the special education preschool. This new development has led to the investigation of questions involving the play of handicapped children. Are the play behaviors commonly observed in non-handicapped children also seen in the special education preschool

population? Is the level of play the result of the child's handicap or of the child's placement in a particular program?

Most preschool handicapped children are placed in either mainstreamed or segregated school programs. Is there a difference between the play behaviors of children in these two different school settings? Studies by Appoloni, Cooke and Cooke (1975), Snyder, Appoloni and Cooke (1977) and Plummer (1977) point to the potential of interactions between nonhandicapped and handicapped children in mainstreamed play situations. They believe these interactions may serve to adapt behaviors, reinforce behaviors and allow children to use each other as models. As a result, it is expected that the level of play behaviors in mainstreamed handicapped children will more closely approximate that of nonhandicapped children than will the play behavior exhibited by segregated handicapped children.

Mildred Parten (1932) defined five hierarchical categories of play interactions seen when observing preschool children engaged in play. The categories are onlooking, solitary play, parallel play, associative play and cooperative play (see Appendix A). They are developmental categories in that children generally begin at the onlooking level and with increasing social interactions move through the level so that by the end of the preschool years they are engaged in cooperative play. Fifty years later these categories continue to be accepted and recognized as a method of evaluating children's social development.

At the same time that socialization play develops, the complexity of the play increases. Ellis (1975) reviewed the work of Piaget and describes the three stages of play through which children move: practice play, symbolic play and games with rules (see Appendix B).

An issue surrounding the role of play in young children is that of the adult's role. Play may be directed by the children or be initiated by the teacher. Newmann and Harris (1977) found that special educators are more likely to use directed play as an educational tool than are teachers in regular classrooms. Teachers of children with special needs are more apt to direct the play experience and in so doing, use it to teach a specific skill, or give the handicapped child a specific experience. It is not yet clear if the increased teacher direction is due to the needs of the special education children or to the therapy orientation of the special education teacher.

As a result of the increased concern regarding play in the special education curriculum, the present study was undertaken to examine the following hypotheses:

1. That play behaviors commonly observed in nonhandicapped children are also seen in the preschool special education population.
2. The level of play behavior in mainstreamed handicapped children will more closely

approximate that of nonhandicapped children than will the play behavior exhibited by segregated handicapped children.

3. A decreasing frequency of teacher direction in children's play activities will be observed according to the following pattern:
 - a. segregated handicapped children
 - b. mainstreamed handicapped children
 - c. mainstreamed nonhandicapped children

Subjects

Forty-five middle income preschoolers, ages three to six from varied ethnic and racial backgrounds were included in the study. The population was equally divided between (a) handicapped children from segregated special education classrooms (b) handicapped children from mainstreamed settings (c) nonhandicapped children from mainstreamed settings. The handicapped subjects were certified emotionally impaired, hearing impaired and having physical and other health impairments (see Table I). The placement of handicapped children in mainstreamed and segregated programs was not based on the severity of impairment, but rather on parental request. The handicapped children in the segregated settings were grouped according to impairment. The nonhandicapped sample was randomly selected from the total nonhandicapped population enrolled in participating mainstreamed settings.

TABLE I
POPULATION

	SEX		AGE		E.I.	HANDICAP	
	M	F	X	S.D.		H.I.	P.O.H.I.
Handicapped Segregated	8	7	4.7	.3	5	5	5
Handicapped Mainstreamed	5	10	4.2	.5	5	5	5
Nonhandicapped	7	8	4.2	.5			

Method

The data was collected in one school semester in public and private preschools in southeastern Michigan. Each subject was observed for two forty-five minute periods, four months apart, during the free play time in the classroom. A three minute time sample procedure was used to record children's play activities during that time. Children's behaviors were coded to indicate the following:

1. Level of play according to Parten
2. Level of play according to Piaget
3. If play behaviors were child or adult initiated

Each rating was independent of the other two ratings. Ratings were done by one of two observers who established a .91 reliability in previous observations of handicapped and nonhandicapped preschoolers. Both raters were unaware of the hypotheses of the study.

Results

Ratings from the two observation periods were summed to obtain the total number of behaviors exhibited by each subject in each of Parten's five and Piaget's three levels of play. Eight one-way analyses of variance were then computed to determine if the mean number of play behaviors within each level differed significantly between the three groups of children. Parten's

categories of onlooking ($F= 7.2$, $p < .002$), solitary ($F= 20.7$, $p < .001$) and parallel ($F= 14.8$, $p < .001$) play were utilized with differential frequency by the three groups of children (see Table II). The categories of associative and cooperative play were not so differentially utilized. As would be expected, these developmentally more advanced levels of play, which together accounted for about only 18% of the children's play, were not as frequently observed as the less sophisticated play behaviors.

Piaget's levels of play were not differentially observed in the three groups of children. Practice play characterized almost two-thirds of the play behaviors and symbolic play and games with rules were infrequently observed.

A complexity of play scores were also computed for the children. Each Parten and Piagetian level of play was weighted for developmental complexity. The weights of the Parten and Piagetian levels coded for each observation period for each child were multiplied, summed across observations and divided by the total number of observations. This score was also subject to an analysis of variance and indicated a trend toward differential levels of play complexity between groups ($F= 2.8$, $p < .08$) (see Table II).

The total number of play behaviors initiated by adults was determined for each child. Analysis of variance indicated that these behaviors did not occur equally across groups ($F= 19.5$, $p < .01$).¹

TABLE II

DIFFERENTIAL PLAY BEHAVIORS IN NONHANDICAPPED AND
HANDICAPPED GROUPS

BEHAVIORS	NONHANDICAPPED MAINSTREAMED		HANDICAPPED MAINSTREAMED		HANDICAPPED SEGREGATED		f	p
	M	SD	M	SD	M	SD		
Onlooking	8.4	2.1	7.7	3.2	12.4	4.9	7.21	< .002
Solitary	7.8	3.8	5.9	3.5	14.7	4.4	20.7	< .001
Parallel	9.8	3.4	10.9	3.8	4.5	3.1	14.8	< .001
Play Complexity	1.6	.5	1.6	1.0	1.1	.6	2.8	< .08
Adult Initiated Interaction	3.5	3.1	4.3	2.1	14.1	8.1	19.5	< .001

Group means for each significant variable were compared to determine those group differences that were significantly different from one another. The pattern of significance was identical for each of the five variables tested. In no case was the difference between the Nonhandicapped Mainstreamed children (MN) and the Handicapped Mainstreamed children (HM) significant. In all cases, however, the difference between the mean of the Handicapped Mainstreamed children and the Handicapped Segregated children reached significance. This pattern occurred for onlooking ($t_{NM, HM}^2 = .6, p > .10, t_{HM, HS} = 3.5, p < .001$), solitary play ($t_{NM, HM} = 1.3, p > .10, t_{HM, HS} = 6.1, p < .001$), parallel play ($t_{NM, HM} = .9, p > .10, t_{HM, HS} = 5.1, p < .001$), play complexity ($t_{NM, HM} = .1, p > .10, t_{HM, HS} = 2.1, p < .05$), and adult initiating of behavior ($t_{NM, HM} = .5, p > .10, t_{HM, HS} = 5.2, p < .001$).² In addition, the score of the Handicapped Segregated children was always indicative of a less advanced level of behaviors than the score of the Handicapped Mainstreamed children.

Conclusions and Generalizations

The range of hierarchical play levels and categories that are commonly observed in preschool nonhandicapped children are also seen in the preschool special education population. However, the distributions of play behaviors within the range show differences. The handicapped segregated group exhibited the least mature play behaviors in that they had the highest

frequencies in onlooking and solitary play, as well as in interactions with adults. They also had the lowest ratings for parallel play and total play complexity. There was no difference in the level of play behaviors between the mainstreamed handicapped and nonhandicapped groups, although there was always a difference of the level of play behaviors between the special education mainstreamed and segregated groups.

This study replicates findings by Plummer (1977) and Harlick (1978) that the play levels of handicapped children in mainstreamed settings are positively influenced by interactions with nonhandicapped peers. This is not meant to infer that there are no differences in the sophistication with which the play levels are manifested in the handicapped and nonhandicapped children. Both groups do, however, engage in the same play levels.

Teachers were more likely to direct the play of the handicapped children in segregated classrooms than mainstreamed settings. One possible explanation for this difference could be the training of the special education teachers. While most early childhood training programs utilize a developmental approach, many special education programs are based on a therapeutic model. Another explanation is the differential needs of handicapped children in segregated and mainstreamed classrooms. The teachers may have to direct the activities of the segregated handicapped children since they do not have nonhandicapped peers to serve as role models and play partners.

In conclusion, there was a significant difference between the two groups of special education students (segregated and mainstreamed) rather than between handicapped and nonhandicapped students. It is suggested that further research is needed on the relationship between play and learning in segregated and mainstreamed classrooms. However, the major findings of this study support the concept of 'the least restrictive environment' in Public Law 94-142.

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Footnotes

¹Degrees of freedom for all F tests are 2 and 42.

²Degrees of freedom for all t tests are 1 and 42.

APPENDIX A
DEFINITIONS

Parten's Categories of Play (1932)

Onlooker Play

The child observes a group of children playing, but he himself does not overtly enter into the activity.

Solitary Play

The child plays alone and independently with toys that are different from those used by the children within speaking distance and makes no effort to get close to other children. He pursues his own activity without reference to what others are doing.

Parallel Play

The child plays beside, rather than with other children. There is no attempt to control the coming or going of children in the group.

Associative Play

The child plays with other children. The conversation concerns the common activity; there is a borrowing and loaning of play material. . . mild attempts to control which children may or may not play in the group.

Cooperative Play

The child plays in a group that is organized for the purpose of making some material product, or of striving to attain some competitive goal, or of dramatizing situations of adult and group life, or of playing formal games. There is a marked sense of belonging or of not belonging to the group.

APPENDIX B

DEFINITIONS

Piagetian Levels of Play (Ellis, 1975)

Practice

The child abandons the end in favor of playing with the mean itself.

Symbolic

The child is capable of true pretense or make-believe. The child can playfully re-enact the schemes by treating inadequate stimuli as if they were adequate, i.e. by treating them as symbols of something else.

Games with Rules

As a result of the increased cognitive complexity of the child resulting from development, the complexity of play increases with time. This complexity takes the form of constraints or rules imposed on an activity, such that their difficulty increases and competition become possible. "Games with rules...increase in number, both absolutely and relatively with age."